

**BY ORDER OF THE COMMANDER  
AIR FORCE MATERIEL COMMAND**



**AIR FORCE INSTRUCTION 11-301**

**AIR FORCE MATERIEL COMMAND**

**Supplement 1**

**11 FEBRUARY 2000**

***Flying Operations***

**AIRCREW LIFE SUPPORT PROGRAM**

**COMPLIANCE WITH THIS PUBLICATION IS MANDATORY**

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(CMSgt Larry R. Cuffee)  
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This supplement establishes the Aircrew Life Support (ALS) program for HQ AFMC, AFMC depots that have associate reserve personnel assigned to support flying test operations and AFMC field activities that have personnel assigned or attached for flying. It implements AFPD 11-3, *Life Support*. This supplement applies to all personnel, including passengers, flying in aircraft for which AFMC is responsible or may be contractually liable for loss or damage. This supplement does not apply to the Air National Guard (ANG).

***SUMMARY OF REVISIONS***

This supplement incorporates policy and procedures previously contained in AFMCI 11-301, *AFMC Life Support Program*, 26 February 1996. It expands on AFI 11-301 and other Air Force directives concerning life support, Survival, Evasion, Resistance, and Escape Training Instructor (SERE), equipment maintenance, the Air Force Test Parachute Program (TPP) responsibilities, Life Support Human Systems Wing (HSW), and Air Force Research Laboratory (AFRL) personnel. Also, subsequent attachments to this AFMC supplement provide guidance concerning aircrew member life support equipment, aircraft installed life support equipment, and reserve technician responsibilities and related activities.

**AFI 11-301, 1 June 1998, is supplemented as follows:**

- 1.1.1. (Added) AFMC Office of Primary Responsibility (OPR) for this supplement is HQ AFMC/DOV.
- 1.1.2. (Added) AFMC/DOV will establish minimum guidance for standards of life support operations within AFMC and the Air Force TPP at Edwards AFB, CA.
- 1.2. Table 1 of this supplement lists AFMC minimum training requirements for Aircrew Life Support (ALS) continuation training for applicable crewmembers authorized to fly on AFMC aircraft.

**1.3. (Added) Waivers.** Deviations from this supplement are not authorized without HQ AFMC/DOV written approval. Units may request waivers when unique circumstances or requirements affect their capability to support the programs, policies and procedures that are in this supplement. Forward AFMC Form 73, **AFMC Flight Operations Waiver Request**, with supporting information to HQ AFMC/DOV, 508 W. Choctawhatchee Ave, Suite 4, Eglin AFB FL 32542-5713.

1.3.1. (Added) Government flight representatives (GFRs) within AFMC will submit written requests to waive specific requirements of this instruction that are not included in, or conflict with, contractual requirements.

**1.4. (Added) Supplements.** Units will supplement this supplement within 6 months of the publication date IAW AFI 37-160, Volume 1, *The Air Force Publications and forms Management Programs — Developing and Processing Publications*, as required. Send unit supplements to HQ AFMC/DOV for approval.

**1.5. (Added) Changes.** Units are encouraged to propose and recommend policy and procedural improvements to this supplement. Submit all suggested changes and improvements to this supplement on AF Form 847, **Recommendation for Change of Publication**. Send 847 to HQ AFMC/DOV, 508 W. Choctawhatchee Ave, Suite 4, Eglin AFB FL 32542-5713.

**1.6. (Added) Major Command (MAJCOM) Technical Order (TO) Options.** The T.O. procedures listed as “MAJCOM option” is in Attachment 1. If additional procedures become mandatory, units will be advised by message or supplement change. All other “MAJCOM options” will be determined at wing/unit level to standardize TO options within each unit. Life support officers (LSOs) for AFMC squadrons, detachments with no wing function, or tenant units on non-AFMC bases may determine TO options for their unit. All unit options will be reflected in local supplements.

1.7. (Added) A listing of ALS publications, technical orders, abbreviations and acronyms, and definitions for terms used in this supplement is published in **Attachment 1**.

13.1. Represent the command at USAF, AFMC, and other ALS/SERE conferences on the development of new equipment to determine future Air Force and command operational requirements. Represent AFMC at the Multi-Command Aircrew Life Support Conference, and Worldwide SERE Training Instructor Conference, and host the AFMC Conference to include SERE personnel bi-annually.

**13.2. General Responsibilities.** AFMC/DOV is the organization responsible for administering AFMC ALS programs. Life support is a staff function of HQ AFMC Director of Operations (HQ AFMC/DO), HQ AFMC Standardization and Evaluation Division (HQ AFMC/DOV). The HQ AFMC/DOV ALS Branch is the focal point for all policy, procedures, and staff surveillance, related to Aircrew Life Support, Survival, Evasion, Resistance, Escape (SERE) training, and the DOD medical survival training course at Brooks Air Base. Establishes policies and management oversight management for the command aircrew life support, SERE and Test Parachute programs as outlined in AFPD11-3, AFI 11-301, and AFI 36-2209.

13.2.4. (Added) Manage 1T0X1/1T1X1 careers fields IAW AFI 36-2101, *Classifying Military Personnel (Officer and Airman)*, AFMAN 36-2108, *Airman Classification*, AFI 36-2201, *Developing, Managing, and Conducting Training*, and AFMAN 36-2245, *Managing Career Field Education and Training*.

13.2.5. (Added) Provide command requirements to Air Education and Training Command (AETC) for formal aircrew life support and SERE training courses as outlined in AFCAT 36-2223, *Education and Training Course Announcement*.

13.2.6. (Added) Initiate, coordinate, and make recommendations on supply requests regarding ALSE procurement and other supply assistance as required.

13.2.7. (Added) Provide staff evaluation and recommendations on suggestions, technical orders, and reports such as: hazard, product deficiency, and aircraft accident/incident reports that pertain to aircrew life support and related equipment.

13.2.8. (Added) Serve as the AFMC focal point and liaison between the other MAJCOMs on PDM aircraft and life support equipment issues affecting the release and transfer of aircraft.

13.2.9. (Added) Review AFI 25-201, *Support Agreements Procedures* involving AFMC Life Support host tenant and memorandum of agreements, to ensure life support functions are adequately supported.

13.2.10. (Added) Evaluate unit life support functions in conjunction with HQ AFMC/DOV flight operations inspections IAW AFMCI 90-203, *Flight Operations Inspections*, and support the AFMC Inspector General when required. The purpose of these evaluations is to verify compliance with Air Force Instructions, this supplement and applicable TO compliance regarding inspecting and maintaining life support equipment. All support sections (i.e. avionics, egress, parachute, and survival equipment) are subject to inspection.

13.2.11. (Added) Monitor the TPP during developmental operational testing and evaluation of aircrew protection equipment.

13.2.12. (Added) Send operational requirements for life support equipment to the proper HQ AFMC office.

13.2.13. (Added) Initiate requests to HQ AFMC/LGSE for AFMC to redistribute critical life support assets. These requests will include priority allocations and distribution instructions.

13.2.14. (Added) Monitor the assignment of personnel to all special duty, selective and critical life support and SERE positions. AFMC/DOV will review all assignment packages (Equal Plus) before candidates are selected to these assignments.

13.2.15. (Added) Review all unsatisfactory material reports and TO changes initiated by AFMC field activities concerning life support systems.

13.2.16. (Added) Ensure personnel assigned for life support equipment maintenance or life support continuation training are not assigned duties (except related training, according to AFI 36-2201, that will interfere with their primary duties as aircrew life support technicians and SERE training instructors.

13.2.17. (Added) Monitor and inspect the field activities' life support and SERE training programs to ensure they are effective.

13.2.18. (Added) Ensure field activities get appropriate information, guidance, and training before new equipment is received.

13.2.19. (Added) Give technical aid to AFMC aircraft accident/incident boards.

13.2.20. (Added) Monitor all operational testing of life support equipment by AFMC life support personnel and review all deficiency reports submitted for the equipment.

13.2.21. (Added) Act as the focal point for coordination between AFMC and other MAJCOMs concerning operational life support matters (excluding life support system (412A) staff management and system management/item management activities).

**13.8. Formal, Continuation, and Special Training.** Personnel who fly in AFMC aircraft, including aircrew, operational support, civilian contractor, and scientific and technical personnel who perform duties in AFMC aircraft as non-passengers are required the minimum applicable continuation training IAW AFJI 10-220, Volume 1, *Contractor's Flight and Ground Operations*, AFI 11-202, Volume 1, AFMC Supplement 1, *Aircrew Training*, (Attachment 5), and AFI 11-301. AFMC aircrew life support training consists of formal, continuation, and special training.

**13.8.2. (Added) Formal Training.** Formal training consists of the Air Force survival training courses listed in AFI 36-2209, *Survival and Code of Conduct Training*. DFOs request student quotas as necessary to comply with requirements.

13.9. AFMC Aircrew Life Support Continuation Training Table 1 consists of the following listed areas. Frequencies and requirements for these training events are listed in AFI 11-202, Volume 1, AFMC Supplement 1, (Attachment 5).

**Table 1. AFMC Aircrew Life Support Continuation Training.**

AFORMS Identifier	Course
LS01	Local area survival
LS03	Water survival
LS06	Life support equipment
LS07	Egress ejection
LS08	Egress non-ejection
LS09	Hanging harness ejection
LS10	Hanging harness non-ejection
LS11	Low threat combat survival
LS13	HELO emergency egress

**13.9.1. (Added) Special Training.** Special training is designed to fill a specific operational need. Arctic and tropical survival training, Combined Advanced Technology Enhanced Design G Ensemble (COMBAT EDGE) training, and emergency rescue training are in this category.

**13.9.2. (Added) Training Requirements.** The training listed in this chapter will be accomplished as indicated. Each completed training session establishes a new due date according to the following rules:

**13.9.2.1. (Added) Formal Training.** This survival training is one-time training for the personnel specified in AFI 36-2209.

**13.9.2.2. (Added) Aircrew Life Support Continuation Training.** Design training to permit maximum hands-on experience. Training managers will use AFI 11-301, for guidance on the preparation of curricula. Train aircrew and operational support personnel according to AFI 11-202, Vol 1, AFMC Supplement 1, and train other aircrew, MEGPs, Orientation/Incentive flyers, and passengers IAW paragraph 13.11.5.1. DFOs may accept other MAJCOM or Department of Defense (DoD) training, if it meets the intent of this instruction and a source document is provided to verify training accomplishments. All such training received expires according to this instruction. Due dates for training are as follows:

**13.9.2.2.1. (Added) Initial.** Before the first flight or as otherwise referenced in AFI 11-202, Vol 1, AFMC Supplement 1, (Attachment 5).

**13.9.2.2.2. (Added) Semi-annual.** The last day of the 6th month from the date in which training was completed.

**13.9.2.2.3. (Added) Annual.** The last day of the 12th month from the date in which training was completed.

**13.9.2.2.4. (Added) Three-Year.** The last day of the 36th month from the date in which training was completed.

**13.9.3. (Added) Special Training.** Special training is given by aircrew life support continuation training instructors as required to meet mission needs.

13.10. DFOs will include in their supplements in what training block (low-threat combat survival or water) of instruction that they will actively fire pyrotechnics.

**13.11.1. Local Area Survival.** Additional specific areas to be covered are local climate, personal protection, and local terrain as a minimum.

**13.11.3. Water Survival.** All personnel are required to show proficiency in the use of water survival equipment available to be used on their aircraft. Emphasize water survival training according to the degree of the local water survival threat. Field activities located on or near large bodies of water should train in natural waters, if possible. Training in swimming pools is authorized if realism is not compromised. Teach water parachuting procedures if parachutes are utilized on the field activity's aircraft. Supervisors must ensure there are enough safety monitors available to supervise all activities in the water. Safety monitors who provide student assistance in the water must wear a personal flotation device. A person qualified to do cardiopulmonary resuscitation (CPR) must be in attendance. Include the following areas in the course curriculum:

13.11.3.1. (Added) Parachuting into water. Include the post deployment descent checklist, water entry, release of canopy during a drag, and canopy disentanglement. Parasail training, when available, may be used to show student proficiency.

13.11.3.2. (Added) Use of water survival equipment, including boarding single and multi-place life rafts (if applicable) and the use of selected equipment.

13.11.3.3. (Added) Environmental aspects of water survival, including prevention and treatment of common marine injuries and food and water procurement.

**13.11.5. Egress Training.** Personnel will receive egress training in each aircraft for which they are qualified. For ejection systems, provide practice in ejection seat trainers, mockups, or in a de-armed aircraft. For non-ejection seat aircraft with emergency egress systems, (emergency hatches, levers, etc.) provide training in actual aircraft or mockups of emergency hatches, etc. When neither aircraft nor mockup is available, training may be given using drawings and photographs of actual ejection or non-ejection systems. All egress training must follow the training outlines of **Attachments 7 and 8**.

**13.11.5.1. (Added) Abbreviated Egress Training.** Abbreviated egress training is a comprehensive egress briefing that is conducted before each flight. This training is given by a certified ALSCT/SERE instructor, instructor pilots on ejection seat aircraft, and by the aircraft commander or primary aircrew member on transport type aircraft using a briefing guide approved by the DFO. The following personnel are authorized to receive abbreviated egress training:

**NOTE:**

This training will be documented on an AFMC Form 67.

13.11.5.1.1. (Added) Test pilot or Test Pilot School student conducting aircraft qualitative evaluations.

13.11.5.1.2. (Added) Crewmember in flight authorization duty codes X or O (AFI 11-401, *Flight Management*) and flying less often than every 45 days.

13.11.5.1.3. (Added) DOV aircrew member on directed flight operations inspections (AFMCI 90-203).

13.11.5.1.4. (Added) Mission Essential Ground Personnel (MEGP) flying non-ejection type aircraft.

13.11.5.1.5. (Added) Maintenance/Engineering Support Personnel (MESP) flying non-ejection type aircraft.

13.11.5.1.6. (Added) Orientation/Incentive flyer, flying in ejection seat aircraft should received tailored training. The level of training will cover the basics of each subject area in **Attachment 8**, while not overwhelming the individual with excess information (Training is valid for 7 calendar days).

**13.11.7. Parachute Hanging Harness.** Personnel who fly aircraft that carry parachutes will receive hanging harness training. Hanging harness training is accomplished as a non-specific aircraft event for crewmembers qualified in more than one aircraft. Only one hanging harness is required annually. Every unit required to conduct this training must have a hanging harness trainer available. Conduct training according to **Attachment 9**.

**13.11.8. Low Threat Combat Survival Training.** This training consists of the following areas of instruction to include preparation for survival, self-aid, signaling and communications, food and water, protection from elements, and rescue and recovery.

**13.11.9. Helicopter Emergency Egress Device (HEED) Training.** HEED training and Shallow Water Egress Training (SWET) will be conducted in a shallow swimming pool.

**13.11.10. (Added) Special Training.** Life Support and SERE Special Training. Inform flying personnel as soon as possible when standard procedure or equipment changes significantly. The method of communicating the change will vary depending on the complexity or effects of the changes. When a change significantly affects past hands-on training, hold special classes to practice the new procedure or to work on the new equipment.

**13.11.10.1. (Added) Arctic and Tropical.** Special training is conducted for all flying personnel, other than passengers, before flying in or over arctic and tropical climates. This training supplements the continuation low-threat combat and water course that does not include information on arctic and tropical areas. These special courses are current until the last day of the 12th month after the month in which training was given. Course content consists, at least, of a review of the hazards of the specific area and methods of coping with these hazards. All survival training sections must maintain the capability to support this training requirement.

**13.11.10.2. (Added) COMBAT EDGE Training.** All AFMC F-15/F-16 aircrew members will receive one hour briefing on limitations, normal/emergency operations, and failure modes/appropriate corrections. The initial training must be conducted by an aircrew or physiologist who has attended cadre training at the Physiological Training Center, Holloman AFB NM. Unit LSOs will designate trained aircrew, who has flown with the COMBAT EDGE ensemble, as trainers to facilitate future COMBAT EDGE

training requirements. COMBAT EDGE flying training requirements can be found in AFI 11-202, Vol 1, AFMC Supplement 1.

**13.11.10.3. (Added) Emergency Rescue Training (Fire Department Rescue Crews).** At the request of the fire department, life support activities will provide technical support to fire department rescue crews for their instructor upgrade programs. The life support unit will notify the fire department when there is a change in procedures or equipment, to ensure valid training is being provided to assigned crewmembers.

**13.11.10.4. (Added) Other Training.** In addition, units may set up special training requirements to meet specific operational needs. Unit commanders approve the course content and required training frequency.

**14.1. Wing/Unit Level.** A LS function is the responsibility of the DFO at all units. The DFO implements the aircrew life support continuation training program and determines additional training needs required for the activity.

**14.1.1. (Added) Field Activity DFO Responsibilities (Commanders).** Appoint, in writing a rated LSO who has charge of all life support matters, including survival training. The LSO will not be required to perform other additional duties, except as required by limited manning requirements at small squadrons and detachments. Send one copy of the appointment letter to HQ AFMC/DOV, Life Support Branch.

**14.1.2. (Added) Additional Duty LSO Responsibilities.** AFMC squadrons, detachments, and GFRs that are tenants on non-AFMC bases will appoint an additional duty LSO. This LSO monitors the host's or contractor organization's life support program as it applies to the AFMC activity and makes sure this instruction is followed. Responsibilities include those listed in paragraph 14.7, as they apply to the AFMC field activity. When AFMC equipment, training or procedural requirements differ from host base or contractor programs, the DFO will make sure host-tenant or contract support agreements include these requirements where possible. Inform the HQ AFMC/DOV Life Support Branch, in writing, of those portions of support that cannot be provided according to this supplement. If necessary, request support from the nearest major AFMC base.

**14.3. ALSCT Instructor Qualification and Certification Requirements.** Qualified personnel with Air Force Specialty Codes (AFSC) L11XX, L12XX, 1T0X1, or 1T1X1 will conduct egress training. In addition, the DFO may appoint no more than two additional aircrew members as egress instructors, in each squadron/unit, who are current and qualified in their MDS to conduct egress training. To maintain high training standards, field activity LSOs must review training qualifications and certify instructors by letter, annually. The letter of certification must include a list of courses (by aircraft system applicable) each instructor is qualified to teach and must be updated by endorsement throughout the year.

**14.3.2. (Added)** At locations where no one with an authorized AFSC is available to instruct, or where local conditions warrant deviation, DFOs may authorize qualified civilians, primary crewmembers, or other qualified personnel to give portions of the training in this section. These people must be certified according to paragraph 14.3.1.

**14.3.3. (Added)** Certified life support egress instructors for any ejection seat aircraft must attend applicable local egress/cockpit familiarization refresher courses annually IAW AFI 21-112. A qualified egress instructor will instruct the course.

**14.3.4. (Added)** DFOs will ensure there are adequate life support continuation instructors available to provide training for the unit.

**14.3.5. (Added) Training Support.** The Air Armament Center (AAC) and Air Force Flight Test Center (AFFTC) must maintain the ability to send qualified SERE training instructor(s) and suitable training aids TDY to field activities unable to obtain the minimum training from host bases or contractors. When it is more appropriate and less costly, personnel may be sent TDY to AAC or AFFTC for training.

**14.3.6. (Added) Training for SERE Instructors (J1T0X1).** SERE Training Instructors must maintain a high level of proficiency in globally applicable survival skills and principles. Instructors are encouraged to attend or periodically observe formal survival training courses and to participate in survival field exercises conducted by other commands and services.

14.3.6.1. (Added) All SERE training instructors will take part in at least one 3-day survival training exercise per calendar year under realistic field conditions. At locations where many different types of hazardous environments are present, additional field training may be necessary.

14.3.6.2. (Added) LSOs and 1T1X1s are encouraged to observe and take part in all survival training exercises.

**14.3.7. (Added) LSO, Life Support Personnel, and SERE Personnel Qualifications:**

**14.3.7.1. (Added) LSO.** LSOs must maintain current qualifications in one of the field activity's aircraft, preferably one equipped with an ejection seat. Full-time LSOs will attend courses listed in AFI 11-301. Additional duty LSOs are authorized and encouraged to attend those courses.

**14.3.7.2. (Added) Life Support Supervisor or Technician.** Life support supervisors or technicians (1T1X1) must have attained the standards required by AFMAN 36-2108, and completed the mandatory training in AFI 11-301.

**14.3.7.3. (Added) SERE Supervisor or Specialist.** SERE supervisors or specialists (1T0X1) must have attained the standards required by AFMAN 36-2108, and completed the mandatory training in AFI 11-301. SERE personnel assigned to AFMC centers/wings will be parachutist qualified to support training and jump test mission; and at least one must be jumpmaster qualified.

14.4.1. Ensure lesson plans are developed for each type of aircraft with egress or life support equipment installed according to the mission flown by the field activity. Each organization will physically possess current training lesson plans affecting the unit and ensure the aircrew life support continuation training program is effective, and lesson plans are reviewed annually for currency.

14.4.2. (Added) Establish a comprehensive training program to train the assigned crewmembers and ensure training progress and completion are tracked and properly documented.

14.4.3. (Added) Set up at the major flying centers (Edwards/Eglin), J1T0X1 (SERE) position(s) to adequately support aircrew life support continuation training. Ensure adequate J1T0X1 (SERE) manning positions are available at Brooks AFB to provide survival training to DoD medical personnel.

14.4.4. (Added) Sets up procedures to prevent personnel from flying with incomplete or non-current aircrew life support continuation training. Refer to AFI 11-202, Volume 1, AFMC Supplement 1. Waiver requests may be submitted IAW paragraph 1.3. of this supplement.

**14.7.1. (Added) Field Activity LSO or Superintendent/NCOIC Responsibilities.** Be responsible for all life support matters outlined in AFI 11-301 and this supplement, as applicable and coordinate life support matters with HQ AFMC Life Support Branch.

14.7.2. (Added) Ensure records, including records of all supply actions, are kept according to current TOs, manuals, and instructions

14.7.3. (Added) Provide convenient storage areas for authorized flying personnel to store and secure flying equipment between flights.

14.9.1. (Added) Evaluate prototype and pre-production life support equipment used in AFMC aircraft, as required.

14.10.1. (Added) Prepare and maintain current unit supplements and operating instructions.

14.10.2. (Added) Coordinate with unit operations and maintenance sections to ensure flying activities are supported.

14.11. Ensure life support Product Quality Deficiency Reports (PQDR) (TO 00-35D-54) and TO System Publication Improvement Reports (TO 00-5-1) are sent through the HQ AFMC Life Support Branch for coordination and evaluation.

14.11.1. (Added) Serve as a focal point to assist in solving problems with support sections and local depot maintenance inspections of life support equipment.

14.11.2. (Added) Make sure personnel assigned for the field activity's life support equipment maintenance or survival training are not assigned duties (except related training according to AFI 36-2201) that will interfere with their main duty as aircrew life support technician or SERE training instructor.

14.15.1. (Added) Report within 24 hours to the HQ AFMC Life Support Branch each AFMC accident or incident involving aircraft or aircrew life support systems occurring within their area of responsibility.

14.16. Ensure Time Change Requirements Forecasts are accomplished annually using the HSW website and AFMC message guidance.

14.16.1. (Added) Ensure the life support facilities meet the environmental standards outlined in TO 15X-1-1 and adequate facilities and training aids are available for survival continuation training.

14.16.2. (Added) Ensure standby levels of authorized equipment are maintained on an established bench stock or on an in shop accountability tracking system to ensure no excess equipment is on hand.

14.16.3. (Added) Coordinate with supply agencies to ensure flying personnel, life support technicians and SERE instructors have proper equipment for their mission.

14.17.1. (Added) Ensure an AFMC life support representative serves on local safety review boards when either life support equipment or egress potential is affected.

14.17.2. (Added) Coordinate with the flight safety officer to make sure life support and survival training topics are included, at least semi-annually, as part of the flying safety program. Ensure flying personnel are briefed on new items of equipment and changes to existing equipment. The briefing may be done through Flight Crew Information File (FCIF), lectures, or flying safety meetings, depending on the urgency of the requirement.

14.18. (Added) Air Force Research Laboratory will maintain one each life support manpower authorization in AFRL/HECV and HEPA Divisions to support **Night Vision Device Test and Evaluation and Ejection Seat Extraction and Integration Systems**. They will provide technical expertise and support for issues pertaining to research, development, test, and evaluation of systems that affect aircrew protection.

14.19. (Added) The 311th Human Systems Wing (HSW) will maintain four life support manpower authorizations to support the Systems Program Office in the development, acquisition and sustainment of equipment for aircrew protection. They will also support testing and evaluation of life support equipment and act as liaison between the MAJCOMs on the issues that affect life support systems for aircrew protection.

14.20. (Added) The Air Force Reserve Command (AFRC) associates performing flying operations in support of AFMC Air Logistic Centers/depot level will comply with this supplement. In addition, they will support the centers on inspecting aircraft installed life support equipment (AFI 11-302, Vol 1) that transfer with the aircraft for PDM. Any issues concerning the life support depot operations and PDM aircraft equipment will be directed to HQ AFMC/DOV. HQ AFMC has management oversight and is responsible for the flight operations inspection of these units.

**Attachment 1**  
**GLOSSARY OF MAJCOM T.O. OPTIONS, REFERENCES AND SUPPORTING**  
**INFORMATION**

**LIST OF OPTIONS:** Technical Order options listed below are applicable to AFMC. Options marked “Mandatory” will be implemented if your unit maintains the affected equipment. Options marked “Unit” may be implemented at the discretion of the DFO.

**MAJCOM T.O. Options**

<b>T.O.</b>	<b>Reference</b>	<b>Subject</b>	<b>Option</b>
13A1-1-1	PARA 3-5	180 Day inspection of PCU-17/P Restraint Harness and HBU-6/P Safety Straps	Mandatory
	PARA 2-19	Optional restraint line stowage pocket	Mandatory
14-1-4	2-6, NOTE 2	Use of local control numbers	Mandatory
14D1-2-1	3-4h	Routing of chest straps through V-ring	Mandatory
14D3-11-1	5-10h, NOTE	Installing webbing and snaps for stowing zero delay lanyard	Mandatory
	5-16c	Installation of SDU-5/E light on torso harness	Mandatory
	5-16f, NOTE	Installation of SRU-16/P minimum survival kit	Mandatory
	5-16f(1) or (2)	SRU-16/P in minimum survival kit pocket	Unit
	5-16g(12), NOTE	Direct beacon plug-to-riser hookup	Mandatory
	11-8m, NOTE	Installation of AN/URT-33c/m beacon	Mandatory
	11-8o, NOTE	Installation of hook blade knife	Mandatory
	13-9g, NOTE	Installation of personnel lowering device	Unit
	18-9e, NOTE	Installation of minimum survival kit	Mandatory
	18-9f, NOTE	Installation of SDU-5/E strobe light	Mandatory

	18-9f, NOTE	Installation of SDU-5/E strobe light	Mandatory
	18-9n	Installation of AN/URT Series Beacon	Mandatory
14P3-1-112	2-4, NOTE	Location of MC-1 knife on outer garment	Mandatory
	2-16	Rework of flight jacket for wear with combat edge equipment	Unit
14P3-4-151	1-2.7.1	High contrast visors wear	Unit
	3-2.6, NOTE	Manufacture/Installation of Night Vision System Mounts	Unit
	5-4.3	Life Support performs postflight inspection responsibilities	Mandatory
14P3-5-81	2-8	Wear of Anti-Exposure suit accessories	Mandatory
14P3-5-91	1-14, NOTE	Determination of essential clothing and equipment requirements	Mandatory
14P3-6-121	6-1, NOTE	Garment cleaning will be accomplished by Life Support technicians	Mandatory
	4-3.2. NOTE	Check the garment fit on each aircrew and re-accomplish as necessary during the periodic inspection	Mandatory
14S-1-102	NOTE	Information pertaining to organization, unit and activity on all flotation equipment will be deleted	Mandatory
	5-1.1. NOTE	Initial functional test will be accomplished	Mandatory
	Table 7-3, NOTE 4	Spare battery	Mandatory
	Table 7-3, NOTE 7	Use of SDU-5/E	Mandatory
	Table 7-3, NOTE 8	Use of desalter kit	Mandatory
	Table 7-4, NOTE 4	Spare battery	Mandatory
	Table 7-4, NOTE 10	Use of SDU-5/E	Mandatory
14S1-3-51	1-1.3. NOTE	ALSMS	Mandatory
	2-7.2.	ALSMS	Mandatory
	7-1, 7-3	Options approved by MAJCOM	Mandatory

15X5-3-6-1	4-7.1, NOTE	Taping mask for temporary use	Unit
	4-13	Postflight inspection (MBU-12/P)	Mandatory
	5-6	Frequency of 12/P mask disassembly every 30 days	Mandatory
	5-19.5a	Strap fastener in lieu of hose clamp	Mandatory
	5-19.5b	Use of strap fastener installation tool	Mandatory
	5-19.9a	Torquing of MBU-12/P valve	Mandatory
15X5-4-1-101	3	Recording of CRU inspection in ALSMS	Mandatory
	3b, NOTE	Use of MQ-1 and MH-2	Mandatory
15X5-4-4-12	4-4d(5), NOTE 3	Alternate method for securing 5/P mask straps	Unit
	5-2	Frequency of 5/P mask disassembly every 30 days	Mandatory
	5-5e	Use of strap fastener on MBU-5/P masks	Mandatory
	5-11a, NOTE	Postflight inspection by Life Support	Mandatory
15X5-4-4-13	3-2e	Use of strap fastener	Mandatory
15X5-4-5-3	7a(3)	Use of strap fastener	Mandatory
15X5-4-8-1	6-2	Life support personnel inspect and repair MBU-10/P masks	Mandatory
	6-2	Complete disassembly of masks will not exceed 120 days	Mandatory
	6-4i	Use of strap fastener	Mandatory
15X5-4-10-1	3-1e	Storage of anti-smoke goggles on smoke mask	Unit
	4-2a(8)	Quick don mask vent valve will be in closed position when smoke goggles are not in use	Mandatory
	5-2d	Complete disassembly of masks will not exceed 120 days	Mandatory
	5-5.3.3.	Use of strap fastener	Mandatory

15X5-5-3-1	5-5b(6), NOTE	Record periodic inspection in ALSMS, DD Form 1574 and pressure sensitive tape	Mandatory
	5-8o	Use of strap fastener on smoke/quick don masks	Mandatory

**LIST OF PUBLICATIONS:** The following publications are required to effectively manage and support an AFMC Life Support program. These publications are listed for reference only and are not all inclusive. LSOs, superintendents, NCOICs, supervisors, and technicians should possess a working knowledge of these publications and supplements, where applicable.

### ***References***

AFIND 2, *Numerical Index of Standard and Recurring Air Force Publications*

AFIND 8, *Numerical Index of Specialized Education/Training Publications*

AFIND 9, *Numerical Index of Departmental Forms*

AFIND 10, *Management Control and Authorization Program Allowance Source Codes (ASC) for USAF Activities*

AFIND 17, *Index of Air Force Occupational Safety and Health (AFOSH) Standards, Department of Labor Occupational Safety and Health (OSHA) Standards, and National Institute for Occupational Safety and Health (NIOSH) Publications*

AFIND18, *Index of Air Force Manpower Standards*

AFMAN 10-100, *Airman's Manual*

AFI 10-201, *Status of Resources and Training System*

AFJI 10-220, Volume 1, *Contractor's Flight and Ground Operations*

AFJI 10-220, Volume 2, *Government Flight Representative Guidance*

AFMAN 10-401, *Operation Plan and Concept Plan Development and Implementation*

AFI 10-601, *Mission Needs and Operational Requirements Guidance and Procedures*

AFI 10-1101, *Operations Security*

AFI 11-202, Volume 3, *General Flight Rules*

AFI 11-202, Volume 1, *Aircrew Training*

AFPD 11-3, *Life Support*

AFI 11-301, *Aircrew Life Support Program*

AFI 11-302, Vol 1, C-5, C-9, C-17, C-20, C-21, C-27, C-130, C-141, KC-10 and C/KC-135, *Maintenance and Configuration Requirements for Aircrew and Aircraft-Installed Life Support Equipment (LSE)*

AFI 11-401, *Flight Management*

AFI 11-403, *Aerospace Physiological Training Program*

AFI 11-404, *Centrifuge Training for High-G Aircrew*  
AFI 21-101, *Maintenance Management of Aircraft*  
AFI 21-103, *Equipment Inventory, Status, and Utilization Reporting*  
AFI 21-112, *Aircraft Egress and Escape Systems*  
AFI 21-201, *Inspection, Storage, and Maintenance of Non-Nuclear Munitions*  
AFI 21-202, *Combat Ammunition System Procedures*  
AFI 21-208, *Munitions Forecast, Allocation, and Buy Budget Processes*  
AFCAT 21-209, *Ground Munitions*  
AFPD 21-3, *Technical Orders*  
AFMAN 23-110, Vol 1 Part 1, *Basic AF Supply Procedures*  
AFMAN 23-110, Vol 2, Part 2, *USAF Standard Base Supply System*  
AFMAN 23-110, Vol 2, Part 13, *Standard Base Supply Customer's Procedures*  
AFMAN 23-110, Vol 4, Part 1, *Air Force Equipment System Policy and Procedures*  
AFI 23-111, *Management of Government Property in Possession of the Air Force*  
AFMAN 23-220, *Reports of Survey for Air Force Property*  
AFJMAN 24-204, *Preparing Hazardous Materials for Military Air Shipments*  
AFI 24-301, *Vehicle Operations*  
AFI 24-302, *Vehicle Maintenance Management*  
AFMAN 24-307, *Procedures for Vehicle Maintenance Management*  
AFMAN 24-309, *Vehicle Operations*  
AFI 25-101, *War Reserve Materiel (WRM) Program Guidance and Procedures*  
AFI 25-201, *Support Agreements Procedures*  
AFI 31-101, Vol 1, *The Air Force Physical Security Program*  
AFI 31-207, *Arming and Use of Force by Air Force Personnel*  
AFI 31-209, *The Air Force Resource Protection Program*  
AFH 31-223, *The Air Force Resource Protection Program*  
AFH 32-1084, *Facility Requirements*  
AFI 32-2001, *The Fire Protection Operations and Fire Prevention Program*  
AFI 34-217, *Air Force Aero Club Program*  
AFI 36-2101, *Classifying Military Personnel (Officers and Airmen)*  
AFMAN 36-2108, *Airman Classification*  
AFI 36-2201, *Developing, Managing, and Conducting Training*

AFI 36-2209, *Survival and Code of Conduct Training*

AFI 36-2217, *Munitions Requirements for Aircrew Training*

AFCAT 36-2223, *USAF Formal Schools* (automated by Air Force Education and Training Course Announcements (ETCA), <http://hq2af.keesler.af.mil/etca.htm>)

AFMAN 36-2236, *Guidebook for Air Force Instructors*

AFMAN 36-2241, Vol 1, *Promotion Fitness Examination Study Guide*

AFMAN 36-2241, Vol 2, *United States Air Force Supervisory Examination Study Guide*

AFMAN 36-2245, *Managing Career Field Education and Training*

AFPAM 36-2246, *Aircrew Survival*

AFI 36-2403, *The Enlisted Evaluation System*

AFI 36-2803, *The Air Force Awards and Decorations Program*

AFI 36-2807, *Headquarters United States Air Force Deputy Chief of Staff Plans and Operations Annual Awards Program*

AFI 36-2903, *Dress and Personal Appearance of Air Force Personnel*

AFI 36-2923, *Aeronautical, Duty and Occupational Badges*

AFI 37-122, *Air Force Records Management Program*

AFI 37-124, *The Information Collections and Reports Management Program; Controlling Internal, Public, and Interagency Air Force Information Collections*

AFH 37-137, *The Tongue and Quill*

AFI 37-138, *Records Disposition--Procedures and Responsibilities*

AFMAN 137-139, *Records Disposition Schedule*

AFI 37-160, Vol 1, *The Air Force Publications and Forms Management Programs--Developing and Processing Publications*

AFI 38-101, *Air Force Organization*

AFI 38-201, *Determining Manpower Requirements*

AFI 38-204, *Programming USAF Manpower*

AFI 38-401, *The Air Force Suggestion Program*

AFI 48-101, *Aerospace Medical Operations*

AFI 48-116, *Food Safety Program*

AFI 48-123, *Medical Examination and Standards*

AFR 64-4, Vol 1, *Survival Training* (projected to be AFMAN 36-2216)

AFP 64-15, *Survival and Emergency Uses of the Parachute* (projected to be AFPAM 36-2242)

AFI 90-201, *Inspector General Activities*

AFI 90-501, *Criteria for Air Force Assessments*

AFMAN 91-201, *Explosives Safety Standards*

AFI 91-202, *The US Air Force Mishap Prevention Program*

AFI 91-204, *Safety Investigations and Reports*

AFI 91-205, *Non-Nuclear Munitions Safety Board*

AFPAM 91-211, *US Air Force Guide to Mishap Investigations* (forthcoming)

AFI 91-213, *Operational Risk Management Program*

AFPAM 91-214, *Managing Risk and Operational Decision Making* (forthcoming)

AFI 91-301, *Air Force Occupational and Environmental Safety, Fire Prevention, and Health (AFOSH) Program*

AFI 91-302, *Air Force Occupational Environmental Safety, Fire Protection, and Health (AFOSH) Standards*

AFP 170-1, *Resource Manager's Handbook* (projected to be AFPAM 65-605)

AFMS 13C1, *Current Operations Flight*

AFMS 31C1, *Life Support Section* (AFMC Standard)

AFOSH STD 48-1, *Respiratory Protection Program*

AFOSH STD 48-8, *Controlling Exposures to Hazardous Materials*

AFOSH STD 48-19, *Hazardous Noise Program*

AFOSH STD 48-21, *Hazard Communication*

AFOSH STD 91-22, *Walking Surfaces, Guarding Floor and Wall Openings and Holes, Fixed Industrial Stairs, and Portable and Fixed Ladders*

AFOSH STD 91-31, *Personnel Protective Equipment*

AFOSH STD 91-32, *Emergency Shower and Eyewash Units*

AFOSH STD 91-43, *Flammable and Combustible Liquids*

AFOSH STD 91-45, *Hazardous Energy Control and Mishap Prevention Signs and Tags*

AFOSH STD 91-46, *Materials Handling and Storage Equipment*

AFOSH STD 91-56, *Fire Protection and Prevention*

AFOSH STD 91-66, *General Industrial Operations*

AFOSH STD 91-67, *Liquid Nitrogen and Oxygen Safety*

AFOSH STD 91-68, *Chemical Safety*

AFOSH STD 91-100, *Aircraft Flight Line - Ground Operations and Activities*

AFOSHTD 161-21-1W, *Department of Defense, Federal Hazard Communication Training Program, Student's Workbook*

CFETP 1T0X1, Parts 1-2 AFSC 1T0X1, *Survival Evasion, Resistance, Escape (SERE) Training Instructor Career Field Education and Training Plan*

CFETP 1T1X1, Parts I-II AFSC 1T1X1, *Aircrew Life Support Career Field Education and Training Plan*  
DoD 4515.13-R, *Air Transportation Eligibility*

DPSC Manual 4155.2, Appendix A, *Medical Inspection Procedures for Operational Rations*

AS 016, *Special Purpose Clothing and Personal Equipment*

AS 450, *Personal/Life Support Equipment*

AS 660, *Equipment Allowances for Non-Weapon Systems Communications Requirements*

AFMCI 21-107, *Tool Control and Accountability Program*

AFMCI 21-119, *Test/Evaluation Aircraft Maintenance Management Policy*

AFMCI 90-203, *Flight Operations Inspections*

**LIST OF TECHNICAL ORDERS:** The following Air Force TOs pertain to the inspection, maintenance, storage, and use of personal flying and survival equipment maintained by AFMC ALS personnel. Use of this list is for reference only and are not all inclusive. Maintain a current list of applicable TOs and TC-TOs, and ensure TCTO-series are on order.

**TO/TCTO-SERIES TECHNICAL ORDER TITLE**

0-1-CD-1, *Numerical Index (CD-ROM version)*

**0-1-01, Numerical Index**

0-1-02, *General Technical Orders*

0-1-11, *Armament Equipment*

0-1-12, *Airborne Electronic Equipment*

0-1-13, *Aircraft Furnishings and In-flight Feeding Equipment, Cargo Loading, Aerial Delivery and Recovery Equipment, Aircraft Fire Detection and Extinguishing Equipment*

0-1-14, *Deceleration Devices and Personal and Survival Equipment*

0-1-15, *Aircraft and Missile Temperature Control, Pressurizing, Air Conditioning, Heating, Ice Eliminating, and Oxygen Equipment*

0-1-31-4, *Ground Radio Electronic Equipment*

0-1-33-1, *General Purpose Test Equipment*

0-1-33-2, *Inspection, Laboratory and Special Purpose Test Equipment (Aircraft, Aircraft Accessories, Automatic Flight Control Systems, Aircraft Engines)*

0-1-33-3, *Special Purpose Test Equipment (Armament, Automotive, Electrical, and Electronic)*

0-1-40, *Commercial Air Conditioning, Heating, Plumbing, Refrigerating, Ventilating, and Water Treating Equipment*

0-1-42, *Coating, Cleaning and Sealing Compounds and Fuels, Gases, Lubricants, Chemicals and Materials*

00-CD-1, *Technical Manual Set, Methods and Procedures TOs, (CD-ROM version, contains most 00-Series TOs)*

00-5-1, *AF Technical Order Systems*

00-5-2, *Technical Order Distribution System*

00-5-2-2, *Automated Technical Order Management System (ATOMS) 4.2 User Manual*

00-5-2-102, *ATOMS Application Software*

00-5-15, *Air Force Time Compliance Technical Order System*

00-20-1, *Preventive Maintenance Program General Policy Requirements and Procedures*

00-20-5, *Aircraft, Drone, Aircrew Training Devices, Engines, and Air-Launched Missile Inspections, Flight Reports, and Supporting Maintenance Documents*

00-20-7, *Inspection System, Documentation, and Status Reporting For Support and Training Equipment*

00-20-9, *Forecasting Replacement Requirements for Selected Calendar and Hourly Time-Change Items*

00-25-06-2-1, *Intermediate Maintenance 412A Survival/Life Support System Equipment Work Unit Code Manual*

00-25-213, *Transportation, Storage, Testing, Shelf Life, and Quantity Unit Pack Requisitioning of Dry Batteries*

00-25-241, *Parachutes Logs and Records*

00-35A-39, *Instructions for Procurement, Issue, Use, and Maintenance of Medical Kits*

00-35D-54, *USAF Materiel Deficiency Reporting and Investigating System*

00-110N-2, *Radioactive Waste Disposal*

00-110N-3, *Requisition, Handling, Storage, and Identification of Radioactive Material*

1-1-641, *Minimum Equipment Requirements for Overwater, Arctic, and Desert-Tropic Flights*

11A-1-1, *Restricted or Suspended Munitions*

11A-1-10, *General Instructions Munitions Serviceability Procedures*

11A-1-46, *Fire Fighting Guidance, Transportation, and Storage Management Data*

11A10-26-7, *Storage and Maintenance Procedures Pyrotechnic Signals*

11A10-30-7, *Storage and Maintenance Procedures Pyrotechnic Fuses and Fire Starters*

11P-1-7, *Storage and Maintenance Procedures Cartridges for Aircrew Escape Systems*

11P7-20-7, *Cartridge Assembly Harness Release and SEAWARS*

11P10-6-7, *Storage and Maintenance Procedures--PCU-63(V)/P--Universal Water Activated Release System (UWARS), P/N 1814-017-01 and 1814-017-02*

11P12-15-7, *Cutter Reefing Line, P/N C1-1.15 and C1-4.0*

12S10-2AVS6-12, *General Support Maintenance Manual, Aviator's Night Vision Imaging System AN/AVS-6(V)1 and AN/AVS-6(V)2*

12S10-2AVS6-21, *Operational Support and Intermediate Maintenance Manual for Aviator's Night Vision Imaging System AN/AVS-6(V)1*

12S10-2AVS9-1, *Operator's and Organizational Maintenance Manual, Image Intensifier Set, Night Vision, Type AN/AVS-9(V)*

12S10-2AVS9-2, *Maintenance Manual, Intermediate with Illustrated Parts Breakdown, Image Intensifier Set, Night Vision, Type AN/AVS-9(V)*

13A1-1-1, *Repair, Cleaning, Inspection, and Testing of Aircraft Safety Belts, Shoulder Harness, and Miscellaneous Personnel Restraint Equipment*

14-1-4, *Identification Marking of Clothing and Personal Type Flying Equipment*

14D1-1-1, *Styles of Parachutes to Be Used In Various Type Aircraft*

14D1-1-2, *Cleaning of Parachute Assemblies*

#### **14D1-2, TCTO Series**

14D1-2-1, *Personnel Parachutes*

#### **14D2-8, TCTO Series**

14D2-8-1, *Use, Operation Inspection, Arming and Disarming Instructions With Illustrated Parts Break-down Automatic Parachute Ripcord Release P/N 6010100 - Series*

#### **14D3-10, TCTO Series**

14D3-10-1, *Inspection, Repair, and Packing Instructions Ejection Seat Aircrew Recovery Parachute P/N J114509 - Series (ACES II)*

#### **14D3-11, TCTO Series**

14D3-11-1, *Operation, Inspection, Maintenance, and Packing Instructions for Emergency Personnel Recovery Parachute (Chest, Back, Seat Style, and Torso Harness)*

#### **14P3-1, TCTO Series**

14P3-1-112, *Maintenance Instructions NomexÆ Flight Gear, Coveralls, Gloves, Jackets*

14P3-1-121, *Custom Fitting Procedures for Flying Helmet Assemblies, HGU-55/P*

14P3-1-161, *COMBAT EDGE Equipment*

#### **14P3-4, TCTO Series**

14P3-4-151, *Operation and Maintenance Instructions With Illustrated Parts Breakdown HGU-55/P Flyer's Helmet*

14P3-4-181, *Operation and Maintenance Instructions With Illustrated Parts Breakdown SPH-4AF Helmet*

#### **14P3-5, TCTO Series**

14P3-5-61, *Operation, Service, and Maintenance Instructions Quick-Donning Anti-Exposure Flying Coverall Type CWU-16/P*

14P3-5-81, *Use, Inspection, Fitting, and Maintenance Instructions Anti-Exposure Assembly Type CWU-21/P or CWU-21A/P*

14P3-5-91, *Operation and Maintenance Instructions with Illustrated Parts Breakdown Anti-Exposure Flyers Coverall CWU-74/P*

**14P3-6, TCTO Series**

14P3-6-121, *Use, Operation and Maintenance Anti-G Cutaway Garment Type CSU-13B/P*

**14P3-9, TCTO Series**

**14S-1, TCTO Series**

14S-1-102, *Maintenance Instructions with Parts Breakdown USAF Flotation Equipment*

14S-1-131, *Operation and Maintenance Instructions, Survival Vest Assembly (formerly contained in 14S1-3-51)*

**14S1-3, TCTO Series**

14S1-3-51, *Operation and Maintenance Instructions for Survival Kit Components and Survival Kit Container Assembly MD-1, ML-3, ML-4, SRU-16/P, PSK, and A-16 Sled*

14S1-4-22, *Operation, Maintenance and Disposition Instructions Desalter Kit Type MK-2*

14S1-9-1, *Operation and Maintenance Instructions with Illustrated Parts Breakdown, Survival Actuator P/N 025-750000-1, -5 (H Koch)*

**14S1-11, TCTO Series**

14S1-11-3, *Overhaul Instructions with Illustrated Parts Breakdown, ACES II Survival Kits*

**14S3-1, TCTO Series**

14S3-1-3, *Type and Number of Individual Survival Kit Containers and Life Rafts to Be Used In Various Type Aircraft*

**14S3-7, TCTO Series**

14S3-7-3-2, *Intermediate Maintenance Instructions With Illustrated Parts Breakdown Life Raft Assembly, Part Number 60485-101 (C-17 Forty Six Person Life Raft)*

14S3-8-2-1, *Aviation Crew Systems Inflatable Survival Equipment (LRU-14A/A Life Raft)*

14S5-27-1, *Operation and Maintenance Instructions With Illustrated Parts Breakdown Helicopter Emergency Egress Device (HEED), SRU-36/P*

14S5-31-2, *Intermediate Maintenance Instructions With Illustrated Parts Breakdown Emergency Oxygen Mask Container (C-17 Aircraft Passenger Oxygen Masks)*

**14S6-3, TCTO Series**

14S6-3-1, *Operation and Maintenance With Parts List Forest Penetrator, Rescue Seat Assembly*

14S10-2-2, *Operation and Service Distress Marker Light, P/N ACR/MS-2000M and P/N SDU-5/E*

15X-1-1, *Maintenance Instructions, Oxygen Equipment*

15X1-2-2-1, *Operation and Maintenance Instructions with Illustrated Parts Breakdown, Intermediate Maintenance, Portable Oxygen Unit, P/N 802501-15*

15X1-4-2-4, *Illustrated Parts Breakdown Types MD-1, MD-2, CRU-10/P and H-2 Emergency Bail-Out Oxygen Cylinders*

15X1-4-2-12, *Operation and Field Maintenance Instructions Emergency Bail-Out Oxygen Cylinder Assemblies*

15X5-2-4-1, *Operation and Maintenance Instructions Mask, Passenger Type and Emergency Passenger Oxygen System (EPOS), 289-601AF Kit*

15X5-3-6-1, *Operation, Fitting, Inspection and Maintenance Instructions With Illustrated Parts Break-down MBU-12/P Pressure-Demand Oxygen Mask*

15X5-4-1-101, *Operation, Maintenance and Inspection Instructions Oxygen Mask to Regulator Connector Assemblies*

15X5-4-4-12, *Intermediate Maintenance Instructions Pressure-Demand Breathing Oxygen Mask USAF Type MBU-5/P*

15X5-4-4-13, *Overhaul Instructions with Illustrated Parts Breakdown Pressure-Demand Breathing Oxygen Mask USAF Type MBU-5/P*

15X5-4-5-3, *Overhaul Instructions with Illustrated Parts Breakdown Mask Assembly Oxygen Breathing Part No. 249-350 and 249-355*

15X5-4-10-1, *Operational and Maintenance Instructions With Illustrated Parts Breakdown for Mask Assembly, Folding, Quick-Don Part No. 358-1506V or 358-1506V-1*

15X5-5-3-1, *Operation and Maintenance Instructions With Illustrated Parts Breakdown Fire Fighters and Oxygen Smoke Mask Assemblies*

31R2-1-251, *Transmission of False Distress Signals on Emergency Frequencies*

### **31R2-2PR, TCTO Series**

31R2-2PR-101, *Operation, Organizational, and Field Maintenance Instructions Radio Set AN/PRC-90 and Radio Test Set AN/PRM-32*

31R2-2PRC90-1, *Operation and Maintenance Instructions Radio Set AN/PRC90-1 and Radio Set AN/PRC90-2*

31R2-2PRC90-2, *Intermediate Maintenance Instructions Radio Set AN/PRC90-1 and Radio Set AN/PRC90-2*

### **31R4-2URT33, TCTO Series**

31R4-2URT33-2, *Maintenance Instructions Radio Beacon Set AN/URT-33C/M*

31R4-2URT33-11, *Operation and Maintenance Instructions With Parts Breakdown Radio Beacon Set AN/URT33B.1 and AN/URT-33C/M*

33A1-12-1109-1, *Operation Instructions Maintenance Instructions Illustrated Parts Breakdown Test Set, Battery BT-2B*

### **33D2-10-10, TCTO Series**

33D2-10-10-1, *Instructions With Illustrated Parts Breakdown, MQ-1 Test Set (Sun Electric)*

33D2-10-32-1, *Instructions With Illustrated Parts Breakdown, MQ-1A Test Set (P/N 6504/Tec Air Serv)*

33D2-10-63-1, *Operation and Maintenance Instructions With Illustrated Parts Breakdown Oxygen Leakage Regulator Tester, Model MH-2*

33D2-10-68-1, *Pressure Breathing Oxygen Flight Ensemble Test Set, TTU-529/E*

33D7-71-42-1, *Operation and Maintenance Instructions With Illustrated Parts Breakdown Radio Test Set Model ACR/TS-24(B)*

40W4-15-1, *Operation and Maintenance Instructions With Illustrated Parts Breakdown Manual Reverse Osmosis Desalinators MROD-35-LA-1*

40W4-16-1, *Operation and Maintenance Instructions With Illustrated Parts Breakdown Manual Reverse Osmosis Desalinators MROD-06-LL-1*

42C-1-12, *Quality Control of Chemicals*

### ***Abbreviations and Acronyms***

**AAC**—Air Armament Center

**AFFTC**—Air Force Flight Test Center

**AFRL**—Air Force Research Laboratory

**GFR**—Government Flight Representative

**HSW**—Human Systems Wing

**MEGP**—Mission Essential Ground Personnel

**MESP**—Maintenance/Engineering Support Personnel

**TPP**—Test Parachute Program

**Attachment 2****AUTHORIZATION FOR WEARING THE MC-1 SURVIVAL KNIFE**

**A2.1.** When parachutes are worn (including parachutes integral to an ejection seat), the MC-1 knife with hook blade open, or riser cutter knife, will be carried in the pocket of the outer garment.

**Attachment 3****MINIMUM AIRCREW CLOTHING REQUIREMENTS**

**A3.1.** AFMC units will comply with AFI 11-301, *Aircrew Life Support Program*, AFI 11-302, Volume 1 and 2, *Life Support Equipment Configuration*, Allowance Standards (AS) 016, *Special Purpose Clothing and Personal Equipment*, AS 450, *Personal/Life Support Equipment*, and applicable technical order requirements for wear and use of flight clothing and life support and survival equipment. All waivers will be sent to HQ AFMC/DOV for staffing and approval. All non-passenger personnel (except flight stewards and crewmembers in support of CSAF/CC/CV and AFMC/CC on distinguished visitor airlift missions worldwide) will, as a minimum, wear flight boots, Nomex (or equivalent) coveralls, and have Nomex (or equivalent) gloves in their possession. Personnel flying in fighter or trainer aircraft equipped with ejection seats must wear gloves at all times. Additionally, they will wear an Air Force approved helmet, oxygen mask, harness, and anti-G suit/combat edge (if required).

**A3.1.4.** Aircrews and operational support crewmembers in multi-engine aircraft must wear gloves for takeoff, approach, and landing.

**A3.2.** DFOs will expand above minimum clothing requirements for each mission the field activity flies and for periods when seasonal clothing must be worn. Seasonal periods for local flying may be defined using average ground temperatures and chill factors, instead of the calendar date. Added minimum clothing requirements should be directly related to the aircraft flown, terrain, climate, forecast weather, number of occupants, availability of flight following service, and anticipated timeliness of search and rescue service.

**A3.2.1.** Aircraft commanders will ensure personnel (including passengers) flying on AFMC aircraft wear appropriate clothing and footwear. In addition, personnel receiving taxi rides in an ejection seat aircraft will wear as a minimum flight boots (or equivalent), Nomex coveralls, and Nomex gloves on ejection type aircraft. Also, the wearing of jewelry is prohibited.

**A3.2.2.** Flying personnel operating aircraft from aircraft carriers may wear appropriate non-skid footwear.

**Attachment 4****LIFE SUPPORT AND SURVIVAL EQUIPMENT QUALITY ASSURANCE PROGRAM**

**A4.1. General.** This attachment has procedures to help all levels of command decide the type of life support and survival equipment that would accompany flight personnel during ejection, bailout, ditchings, or forced landing. This quality assurance program applies to AFMC organizations that have assigned life support sections. DFOs must make sure that this program is implemented and the procedures below are followed. Tenant field activities may set up a similar program with the host base or contractor.

**A4.2. Program Procedures.** Semi-annually the LSO/Superintendent chooses one of the activity's assigned aircraft to be checked.

**A4.2.1.** Remove a sample of life support equipment that the aircrew of a selected aircraft should have after a successful ejection, bailout, ditching, or forced landing; transport the equipment to the activity's inspection area. Select the inspection area with care. Take precautions to prevent damage to life support equipment.

**A4.2.2.** Under the supervision of the activity's LSO or superintendent, manually deploy or open the selected equipment to simulate a normal ejection, bailout, ditching, or forced landing sequence. Inspect each item of equipment and note any deficiencies.

**A4.2.3.** Do not activate explosive or automatic opening devices installed in parachutes and survival kits during this check.

**A4.2.4.** Record the check on AF Form 2420, **Quality Assurance Inspection Summary**.

**A4.2.5.** Life rafts and LPUs inflated during these tests will be used to satisfy the functional inflation requirements in the applicable TOs.

## Attachment 5

**LIFE SUPPORT AND SURVIVAL EQUIPMENT REQUIREMENTS**

**A5.1.** AFMC units will comply with AFI 11-301, *Aircrew Life Support Program*, AFI 11-302, Volume 1 and 2, *Life Support Equipment Configuration*, Allowance Standards (AS) 016, *Special Purpose Clothing and Personal Equipment*, AS 450, *Personal/Life Support Equipment*, and applicable technical orders requirements for wear and use of flight clothing and life support and survival equipment. Only Air Force approved flight clothing and life support and survival equipment will be used as appropriate for flight. All waivers will be sent to HQ AFMC/DOV for staffing and approval.

**A5.2. Oxygen and Firefighter Masks.** Use oxygen and firefighter masks on AFMC aircraft, according to AFI 11-202, Volume 3, *General Flight Rules*, aircraft flight manual dash-one procedures, and aircraft maintenance directives.

**A5.2.1.** Bearded personnel flying on AFMC aircraft equipped with ejection seats will be certified by the local LSO as able to wear a mask effectively on a case-by-case basis, without pressure leakage, long enough to be able to accomplish the assigned mission.

**A5.2.2.** Air Force approved quick don oxygen masks may be used for all missions on "C" designated aircraft except missions requiring the wearing of parachutes.

**A5.2.3.** When aircraft oxygen system outlets or walk around cylinders are not available, passenger oxygen kits (POK) (to include an MD-1 emergency oxygen cylinder without red caution tag, MBU-5/P oxygen mask or yellow passenger oxygen mask [part number 289-601 series], and oxygen connector) are authorized for each passenger on AFMC aircraft. Emergency passenger oxygen system (EPOS) may be substituted for POKs. Do not mix this equipment, use all POKs or EPOSs for passengers.

**A5.3. Survival Kits.** An individual survival kit and/or survival vest is mandatory for use with each parachute. Use survival kits described in TOs 14S3-1-3 and 14SI-3-51 in AFMC aircraft that have provisions for survival kits. DFOs will determine missions that require supplemental survival kits (for example, an arctic sled). Life support activities will provide survival kits with the mandatory items listed in Table A5.1 and optional items specified by the DFO, and approved by HQ AFMC/DOV. In non-ejection seat aircraft, when parachutes are not required or aircraft weight and space factors are critical and prescribed individual survival kits cannot be carried, pack minimum survival components listed in Table A5.1 in a metal ammunition box or other suitable container, (EXCEPTION: Helicopter aircrews may use a survival vest(s) in lieu of the minimum kit). Do not pack survival kits in a manner that requires forced closure; for example, in heavy personnel lid loads or mechanical devices. In these cases, choose optional items in the priority defined in TO 14SI-3-51 and keep them to a minimum.

**A5.3.1.** ML-4 survival kits, instead of MD-1 or MB-2 survival kits, may be used when parachutes are required on C-135 aircraft. Do not use ML-4 kits on arctic flights during winter months.

**A5.3.2.** AFMC field activities may remove one-person life rafts from survival kits in aircraft not flying over water, if aircraft forms, FCIF, or unit supplement (as applicable) are annotated that the aircraft is restricted from overwater flights. Keep enough one-person rafts on hand to provide overwater capabilities for the aircraft when required.

**A5.4. Personnel Locator Beacons (PLB).** PLBs are mandatory for ejection seat aircraft, except when contractor-production aircraft configured according to contract or program office directives have no such provision. All non-ejection automatic-back parachutes must have an AN/URT-33 (or equivalent) PLB

installed. Non-automatic-back style parachutes may have a PLB installed at the DFO's option. Tie off the direct beacon plug-to-riser break-cord loop according to applicable 14DI series TOs. Install PLBs so that they will operate continuously when actuated.

**A5.5. Strobe Lights.** An approved distress marker light must be mounted on all personnel parachutes as prescribed in 14DI-2 series TOs. This light may be duplicated in survival kits or vests but is not mandatory in the survival kit if parachutes are carried aboard aircraft.

**A5.6. Survival Vests.** On all flights in ejection seat aircraft where the survival kit is removed, aircrews must wear the survival vest (SRU-21/P). For example, wear the survival vest when flying T-38 aircraft with the survival kit removed to install the instrumentation pack. The personal survival kit (PSK) listed in TO 14SI-9-1 may be used in lieu of the survival vest when flying T-38 aircraft. The PSK will be equipped with the required items listed in Table A5.1. DFOs may direct that survival vests be used on all aircraft in addition to survival kits. The vest may be used instead of the ML-4 or MD-1 survival kit when parachutes are required and when overwater or arctic flight is not a factor. If the survival kit is not carried, equip the survival vest with at least the items indicated in Table A5.1. DFOs may select additional items from TO 14SI-3-51 to meet the field activity's requirements. When the vest is used with a survival kit, DFOs determine the items to be installed in the vest.

**A5.7. Survival Radios.** On all flights, carry at least one portable radio capable of transmitting on appropriate emergency frequencies.

**A5.8. Life Preservers.** DFOs may require that life preserver units (LPU) be worn at any time. The following rules govern the minimum use of LPUs aboard AFMC aircraft:

**A5.8.1.** Aircraft commanders must make sure LPUs are readily available to flying personnel and passengers who fly non-ejection seat aircraft (other than helicopters) on overwater flights outside the power-off gliding distance of land.

**A5.8.2.** Flying personnel wearing parachutes (including parachutes integral to an ejection seat) and personnel flying in helicopters must wear appropriate LPUs on overwater flights that are outside the power-off gliding distance of land.

## **A5.9. Parachutes:**

### **A5.9.1. Fixed-wing Aircraft:**

A5.9.1.1. AFMC aircraft equipped with ejection seats will have parachutes as specified in relevant aircraft TOs and TO 14DI-1-1.

A5.9.1.2. Pre-production aircraft will be equipped with parachutes as specified in contract or program office directives.

A5.9.1.3. AFMC aircraft with three or more engines, and twin-engine transports/utility aircraft which have single engine performance at all stages of the mission profile, are required parachutes as specified in TO 14DI-1-1 for:

A5.9.1.3.1. Performing hazardous tests, acceptance, or research flights to certify airworthiness.

A5.9.1.3.2. Tests of refueling and cargo extraction systems.

A5.9.1.3.3. DFOs are authorized to require parachutes for missions not listed above.

### **A5.9.2. Helicopters:**

A5.9.2.1. DFOs are authorized to direct when parachutes are worn on AFMC helicopters as specified in TO 14D1-1-1 for:

A5.9.2.1.1. Performing hazardous tests, acceptance, or research flights to certify airworthiness.

A5.9.2.1.2. DFOs are authorized to require parachutes for missions not listed above.

A5.9.2.1.3. Crewmembers in the rear of the aircraft and performing parachute operation duties (including dropping parachutists and dropping, towing, or catching parachute-equipped objects) must wear either a lanyard-type restraint harness attached to the aircraft or a parachute. Do not wear a parachute while attached to the aircraft with a lanyard-type restraint harness.

### **A5.9.3. Responsibility of Aircraft Commanders:**

A5.9.3.1. Before takeoff ensure the required number of parachutes are available, assigned, and fitted to each crewmember aboard the aircraft. During preflight briefing, each occupant must be told:

A5.9.3.1.1. Where each emergency exit is located and how to use it.

A5.9.3.1.2. The procedure to use in abandoning the aircraft and sending emergency signals. If the aircraft does not have a public address system or is not used in aero medical evacuation, show the occupants how the alarm system sounds against the background of engine noise.

A5.9.3.2. During flight, all crewmembers will:

A5.9.3.2.1. Wear a parachute all the time, if practical. If the parachute must be removed to perform inflight duties, it must be kept within reach.

A5.9.3.2.2. When moving or working in or near an open door, wear a parachute or authorized restraint harness.

A5.9.3.2.3. Wear protective helmets and survival kits when missions require parachutes.

**A5.9.4.** Spare parachutes are not required on AFMC helicopters. For all AFMC aircraft, keep spare parachutes near emergency exits and easily accessible. Spares are required as follows:

A5.9.4.1. Ten percent (or one extra) of spare parachutes will be preposition on all aircraft for primary aircrew members.

A5.9.4.2. If the aircraft is divided into separate sections (by bomb bay doors or other structures), each section that has more than four persons must have an extra parachute (or 10 percent of the number required in the section, whichever is greater).

**A5.10. Anti-G Garments.** AFMC aircrews will wear anti-G garments whenever flying in aircraft equipped with an anti-G system. DFOs may specify missions (instrument training, cross-country, etc.) on which the anti-G garment may be omitted. As a minimum, AFMC personnel must wear the anti-G garment on all missions when forces will exceed four Gs. Instructions in applicable 14P3-series TOs apply. The fit of the anti-G garment will be checked and reaccomplished as necessary during the periodic inspection.

**A5.11. Combat Edge.** AFMC F-15/F-16 aircrews will wear the COMBAT EDGE ensemble in its entirety on any mission where planned/anticipated maneuvering equals or exceeds 6.0 Gs (refer to AFI 11-2MDS Specific, Volume 3's, *Operations Procedures*). On test missions where this policy is detrimental to the conduct of the test, exclusion will be included in the test plan and subject to test Safety Review Board analysis.

**A5.12. Contractor Production Aircraft.** Contractor production aircraft will be configured as directed by the DFO for production acceptance check flights and functional check flights. DFOs will define the life support and survival equipment configuration according to the contract and program office directives.

**A5.13. Anti-Exposure Suits.** Ejection seat crewmembers must wear anti-exposure suits for preplanned overwater flight when the water temperature is less than 60 degrees Fahrenheit. Anti-exposure suits are not required for AFMC aircraft with three or more engines and twin-engine transports/utility aircraft which have single engine performance at all stages of the mission profile.

**A5.13.1.** The requirement for anti-exposure suits is waived when the overwater portion of flight occurs only during approach or departure and the aircraft is within power-off gliding distance to land.

**A5.13.2.** DFOs may also waive the anti-exposure suit requirement when it is determined that it would adversely affect aircrew efficiency after considering:

A5.13.2.1. Climate zone and existing weather (refer to AFR 64-4, volume 1, *Survival Training*, to be replaced by AFMAN 36-2216) throughout range of flight.

A5.13.2.2. Number and type of aircraft participating in sortie.

A5.13.2.3. Time of flight overwater.

A5.13.2.4. Distance from land.

A5.13.2.5. Mission altitude.

A5.13.2.6. Risk, based on type of sortie.

A5.13.2.7. Degree of surveillance over mission.

A5.13.2.8. Location, availability, and capability of search and rescue forces.

A5.13.2.9. Operational requirements.

**A5.14. Life Rafts:**

**A5.14.1.** AFMC aircraft must be equipped with life rafts as specified in relevant aircraft TOs and TOs 14S3-1-3, 14S-1-102, and 14S1-3-51.

A5.14.1.1. Aircraft commanders must make sure life rafts, containers and components are readily available to flying personnel and passengers who fly non-ejection seat aircraft on overwater flights outside the power-off gliding distance of land.

A5.14.1.2. DFOs may waive life raft requirements if the only overwater portion of the flight is during the departure or approach phase.

**A5.15. Pressure Suits.** Each person flying above FL500 must be trained to use and must wear a pressure suit. The AFMC/DO may waive this requirement if necessary, and if the command surgeon concurs. When a waiver is granted, it must designate specific time or altitude limits and set up recovery procedures to ensure flight safety.

**A5.16. Helmets.** Crewmembers on AFMC aircraft with three or more engines, and twin-engine transports/utility aircraft which have single engine performance at all stages of the mission profile, are required custom fit protective helmets when flying missions requiring parachutes, and when operations require aircraft doors/hatches to be open during flight. Crewmembers on helicopters must wear helmets for all flights. Non-custom fit helmets may be used for one-time flights and for crewmembers on flight orders

for short periods of time. When helmets are worn, hair must not be so bulky that the helmet will not fit properly. Buns, braids, hairpieces, and similar items that prevent proper fit are not permitted. Following the last flight of the day, all helmets will be returned to the life support designated post-flight area for post-flight inspection and storage.

**A5.17. Night Vision Goggles (NVG).** Unit authorizations for NVGs are contained in the AS 016, *Special Purpose Clothing and Personal Equipment*. Unit custodians may submit changes to allowances on an AF Form 601, **Equipment Action Request**, to the Equipment Management Element (EME) in base supply. EME will, in turn, submit your request for NVGs to the appropriate MAJCOM for validation. NVG authorizations are computed on the basis of one per crew position multiplied by the total number of aircraft assigned.

**Table A5.1. AFMC Required Items for Installation in Survival Kits.**

<b>L I N E</b>	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>
	<b>Include these items in the survival kit types listed</b>	Ejection	Non-Ejection	Vest	PSK	Minimum Kit
<b>1</b>	One person Life Raft (see paragraph A5.3.2.)	X	X			
<b>2</b>	Lensatic Compass	X	X	X	X	X
<b>3</b>	*Two MK-13 or MK-124 day or night flares	X	X	X	X	X
<b>4</b>	Mirror	X	X	X	X	X
<b>5</b>	*Personnel distress flare kit A/P25S-5/A	X	X	X	X	X
<b>6</b>	PRC-90 series radio with spare battery	X	X	X	X	X
<b>7</b>	*Pocket or sheath knife	X	X	X	X	X
<b>8</b>	*Waterproof match container	X	X	X	X	X
<b>9</b>	Whistle	X	X	X	X	X
<b>10</b>	Distress marker light (see paragraph A5.5.)	X	X	X		X
<b>11</b>	Sea marker dye	X	X			
<b>12</b>	One can of water or equivalent flex pack water	X	X	X	X	X
<b>13</b>	AFP 36-2246, <i>Aircrew Survival</i>	X	X			X
<b>14</b>	First aid kit	X	X	X	X	X

\*When aircrews deliver an aircraft to a depot or back to its home station and travel via commercial airlines the items denoted with an asterisk will be removed from the minimum survival kit.

**Attachment 6****LIFE SUPPORT EQUIPMENT MAINTENANCE AND INSPECTION****A6.1. Automated Life Support Management System (ALSMS):**

**A6.1.1.** Units using the ALSMS are not required to duplicate the data maintained in the computer on status boards or in-shop inspection cards or forms.

**A6.1.2.** A back-up file must be maintained prior to removing duplicate status boards or in-shop inspection cards or forms from service.

**A6.1.3.** A copy of the master data files must be maintained. Update information in each life support equipment data file daily or as necessary.

**A6.1.4.** Inspection cards and forms replace by ALSMS should be retained for 12 months for historical purposes.

**A6.1.5.** Continue to use inspection tags required by TOs to be maintained in or attached to survival kits, accessory kits, etc.

**A6.2. General Responsibilities:**

**A6.2.1.** The field activity's LSO establish and implement a self-inspection program within their life support sections, to include detachments and operating locations. As a minimum, a life support program self-inspection will be conducted and documented annually. Areas of interest include, but are not limited to:

A6.2.1.1. Compliance with current TO data and higher headquarters directives.

A6.2.1.2. Assignment of realistic supply requisition priorities and documentation of supply follow-up action.

A6.2.1.3. Notification procedures for inspection delinquencies involving individual items and life support and survival equipment signed out by aircrew members and non-rated, non-aircrew, civilian contractor, scientific, and technical personnel.

A6.2.1.4. Aircrew life support continuation training (ALSCT) program effectiveness.

A6.2.1.5. Facility meets environmental standards outlined in TO 15X-1-1 and provide protection for storing life support and related test equipment.

**A6.2.2.** The NCOs in charge of the activity's life support section establish, implement, and monitor comprehensive quality assurance and training programs to ensure familiarity with TOs and to make sure assigned life support personnel are knowledgeable and maintain the highest standards of inspection and maintenance.

**A6.2.3.** Life support personnel who require access to aircraft cockpits must satisfactorily complete a general course on the safety and security of ejection and extraction systems. Training will make sure personnel know the hazards of egress systems and the basic theory, operation, and safety of ejection, extraction, and capsule systems. Qualified egress personnel (2A673/2A693), or civilian equivalent, control and certify training according to AFI 21-112, *Aircraft Egress and Escape Systems*. In addition, applicable 1T171 personnel will attend a local course on maintenance documentation (TO 00-20 series). After completing these courses, the chief of maintenance (or equivalent as certified, such as the life support superintendent) certifies that course attendants are authorized to clear red X symbols entered on AFTO Form 781A,

**Maintenance Discrepancy and Work Document**, for survival kit and integral parachute removal or installation. Life support supervisors must identify by name those who require this training and must send a letter through operations and maintenance channels requesting the training and certification. If not enough seven-level craftsmen are available to support the mission, supervisors may use five-level journeymen of demonstrated aptitude.

**A6.2.4.** Life support personnel are not responsible for the accounting, storage, handling, or servicing of items not related to life support. This includes, but is not limited to, headsets, thermos jugs, fire extinguishers, aircraft portable oxygen cylinders, aircrew handguns, ammunition, holsters, web belts, pyrotechnic flare pistols, smoke goggles, fire axes, aircraft-installed first aid kits, passenger service equipment, cameras, and accessories.

**A6.2.5.** When turning in equipment to support activities for inspection, repair, or modification, use AF Form 1297, **Temporary Issue Receipt**, or equivalent form. Keep the signed original until the equipment is returned.

**A6.2.6.** Inspections of life support equipment for aircraft undergoing programmed depot maintenance (PDM) will be inspected and maintained according to TOs and maintenance operating instructions.

### **A6.3. Flying Personnel Responsibilities:**

**A6.3.1.** Ensure individual and aircraft pre-positioned equipment is checked per applicable TOs for serviceability prior to flight, and use helmet bags to transport the helmet and oxygen mask. Only the helmet and oxygen mask will be carried/stored in the main pocket of the bag. The aircraft commander's designated representative will sign the AFTO Form 46, **Prepositioned Life Support Equipment**, verifying serviceability of pre-positioned life support equipment prior to flight.

**A6.3.2.** Notify the proper life support section of discrepancies in issued or aircrew pre-positioned life support and survival equipment.

**A6.3.3.** Make sure all life support flying equipment that needs to be modified or periodically inspected is available to the life support section.

**A6.3.4.** Process in and out through the life support section to make sure that proper records and documentation are set up and kept with the flying equipment and that the proper person is accountable for them.

**A6.3.5.** Ensure all individually issued life support equipment is returned to a designated post-flight area for post-flight inspection and storage.

### **A6.4. Life Support Section Responsibilities:**

**A6.4.1.** Maintain, fit, inspect, and perform preflight/post-flight inspection on all helmets and oxygen masks according to applicable 14P and 15X series TOs. Specific areas will be designated for post-flight and storage of helmets and oxygen masks. Oxygen masks that are not used during flight, used infrequently, or stored/carried onboard aircraft for emergency use and provided with dust covers will be visually inspected and disinfected every 30 days. Complete disassembly inspection is required every 120 days. Inspect and test attached oxygen mask connectors during the 30-day mask inspection (TO 15X5-4-1-101). If connectors are stowed on parachute torso harnesses (or stored attached to the aircraft supply hose, as in the F-4), inspect them as follows: For F-4 aircraft, inspect every 14 days during the parachute inspection; for all others, inspect during the 30-day inspection of parachute or torso harnesses.

**A6.4.2.** Inspect survival kit and multi-place life raft accessory component containers (applicable 14S and 15X series TOs).

**A6.4.3.** Maintain, fit, inspect, and perform preflight inspections on personnel parachutes, and torso harnesses according to applicable 14D-series TOs. Maintain AFTO Form 392, **Parachute Repack, Inspection and Component Record**. Take parachutes requiring inspection, repack, repair, or time compliance technical order (TCTO) compliance to and from the parachute repack facility.

**A6.4.4.** Fit, issue, and maintain life preservers (applicable 14S-series TO). Maintain AFTO Forms 336, **Life Preserver Inspection Data Record**. Take life preservers requiring periodic inspection, repack, repair, or TCTO compliance to and from intermediate-level maintenance activities.

**A6.4.5.** Maintain and issue anti-exposure coveralls (applicable 14P-series TOs). Maintain AFTO Forms 335, **Anti-G and Constant Wear Anti-Pressure Suit Inspection Data**, and the reverse side of AFTO Forms 336, as applicable. Take coveralls requiring periodic inspection, repack, repair, or TCTO compliance to and from intermediate-level maintenance activities.

**A6.4.6.** Keep a small supply of gloves, helmets, oxygen masks, jackets, coveralls, and anti-G suits on hand to equip authorized personnel who make one time or infrequent flights (AFMAN 23-110, Volume IV, Part One).

**A6.4.7.** Remove and reinstall aircraft-installed integral parachutes and survival kits requiring inspection and periodic repacking. Document the work done according to applicable 00-20-series TOs.

**A6.4.8.** Perform scheduled inspections of aircraft installed integral parachutes and survival kits (14D, 14S, and 15X series TOs). Maintain AFTO Form 392 and AFTO Form 338, **Survival Kit Record**.

**A6.4.9.** Inspect and maintain firefighter masks (15X-series TOs). Maintain AFTO Forms 334.

**A6.4.10.** Take all life rafts (but not aircraft-assigned equipment) requiring periodic inspection, repair, or TCTO compliance to and from intermediate-level maintenance activities.

**A6.4.11.** As a minimum, one aircrew life support technician who maintains night vision goggles (NVG) will be trained and certified through an AETC-approved course, certified instructor, or directly by the manufacture's representative. Life support personnel will perform operational and intermediate level maintenance on aviators NVGs IAW applicable technical orders. In addition, aircrew life support personnel are responsible for issuing, fitting, inspection, maintenance, and storage of aviator night vision goggles. Maintain AFTO Form 334. A DD Form 1574, **Serviceable Tag**, will be attached to the outside of each storage case to reflect the next inspection due date. Life Support personnel will ensure accommodations and test equipment are available for aircrew members to evaluate the operational integrity of the goggle, make proper adjustments, and focus before departure for flight. NVGs will be issued to aircrew members using an appropriate tracking system.

**A6.4.12.** Perform a functional test on survival radio and beacon using the TS-24b tester before installing them in the survival kit or vest. Take PLBs and emergency survival radios that require repair or TCTO compliance to and from avionics maintenance activities.

**A6.4.13.** Inspect and maintain aircraft-installed T-39 overhead oxygen masks (15X-series TOs). Maintain an AFTO Form 334 on each mask or set of masks.

**A6.4.14.** Ensure Bioenvironmental Engineering Service personnel test emergency drinking water and Military Public Health Service personnel inspect survival rations (using DPSC Manual 4155.2, appendix A, *Medical Inspection Procedures for Operational Rations*). This test will be accomplished annually on drinking water and survival rations that have exceeded their manufacturers recommended service life for serviceability. Maintain the serviceability letter on file for each lot number inspected.

**A6.4.15.** Make sure first aid kits in survival kits are inspected according to TO 00-35A-39.

**A6.4.16.** Make sure the life science portion of the Air Force Safety Journal and All Safety Command (ALSAFECOM) messages related to life support are on hand and in a current file. (Files must contain ALSAFECOM messages for the past 12 months). Arrange with the activity's safety offices to receive ALSAFECOM life support messages.

**A6.4.17.** Maintain and inspect pressure suits (applicable 14P-series TOs).

**A6.4.18.** Perform emergency oxygen quick-disconnect-pull test on F-4 aircraft.

**A6.4.19.** Units have the option to inspect, repair, and refill emergency oxygen cylinder assemblies (15X-series TOs).

**A6.4.20.** Inspect anti-G garments (14P-series TOs).

**A6.4.21.** Make sure the receiving agency signs AF Form 1297 or equivalent when delivering life support or survival equipment for inspection and repair.

**A6.4.22.** Maintain two copies of AFTO Form 46, **Prepositioned Life Support Equipment**, for each applicable aircraft. One copy will be located in the aircraft forms, AFTO Forms 781 series, and a duplicate in the life support section.

**A6.4.23.** Periodically inspect and test high-altitude survival kits and survival-kit-installed regulator assemblies (15XII-series TOs).

**A6.4.24.** Keep current operational TO files according to TO 00-5-2.

**A6.4.25.** Keep a functional publications library or individual publications set, as applicable, according to AFI 37-160, Volume 7, *The Air Force Publications and Forms Management Programs Publication Libraries and Sets*. Units may use electronic media to the fullest extent possible, versus paper copies, still keeping the intent of a publications library/set.

**A6.4.26.** Make sure authorized test equipment is calibrated in a timely manner.

**A6.5. Intermediate-Level Survival Equipment and Parachute Section Responsibilities:** (The term intermediate-level maintenance and depot maintenance are synonymous for flying units being directly supported by depot maintenance personnel.)

**A6.5.1.** Perform required periodic inspections, repair, and repack of personnel parachutes and aircraft integrated parachutes and harnesses (14D-series TOs). Document completed work on Maintenance Data Collection Record; AFTO Form 391, **Parachute Log**. Requisition parts or materials, and replace all unserviceable component parts of in-service parachutes and harnesses.

**A6.5.2.** Periodically inspect, repair, and repack drogue chutes.

**A6.5.3.** Provide support for inspecting, repacking, maintaining TCTO kits, TCTO control, acquiring spare parts, and replacing items for SERE training parachutes and parasails.

**A6.5.4.** Requisition parts or material and replace unserviceable components for parachutes and harnesses. Maintain bench stock items for repairing parachutes and harnesses.

**A6.5.5.** Inspect, repack, and make minor repairs to life preservers (14S-series TO). Requisition parts and replace all unserviceable components.

**A6.5.6.** Periodically inspect and make minor repairs on life rafts (14S-series TOs). Requisition parts and replace unserviceable components.

**A6.5.7.** Periodically inspect and repair anti-exposure coveralls (14P-series TOs).

**A6.5.8.** Make minor repairs on anti-G garments (14P-series TOs).

**A6.5.9.** Inspect, repack, and make repairs to emergency evacuation ropes and slides (aircraft and maintenance TOs).

**A6.5.10.** Requisition and replace parts (zippers, cuffs, etc.) and repair flight clothing and equipment. Maintain bench stock items for equipment repairs.

**A6.5.11.** Return PDM aircraft survival kits to the base with their original items installed (except expired items). Inspection of all survival kit items must be current prior to delivery to home station (14S and 15X series TOs).

**A6.5.12.** Make sure life support PQDRs (TO 00-35D-54) and TO System Publication Improvement Reports (TO 00-5-1) are sent to HQ AFMC/DOV for MAJCOM information and evaluation.

#### **A6.6. Egress Section Responsibilities:**

**A6.6.1.** Remove and reinstall aircraft-installed integral parachutes and survival kits when they must be removed for other aircraft maintenance.

**A6.6.2.** When required, remove and reinstall emergency oxygen cylinders on ejection seat aircraft with integral emergency oxygen cylinders.

**A6.6.3.** Clear red X symbol after inspection of the overall ejection seat and extraction system as outlined in AFI 21-112.

**A6.6.4.** Provide maintenance, update, and acquisition of spare parts and TCTO kits. Provide TCTO control and modification of egress and ejection procedures trainers and training seats held by life support and SERE training sections.

**A6.6.5.** Conduct egress/cockpit familiarization training for life support technicians (1T1X1), as required by paragraph A6.2.3.

**A6.6.6.** Inspect and replace, if necessary, aircraft-installed parachute restraint straps and lapbelts.

**A6.6.7.** Perform emergency oxygen quick disconnect pull test as required.

#### **A6.7. Aircraft Crew Chief/Flightline Maintenance Responsibilities:**

**A6.7.1.** Take aircraft-installed first aid kits requiring periodic inspection to and from the medical supply activity.

**A6.7.2.** Take emergency evacuation ropes needing repair to and from the intermediate-level support activities.

**A6.7.3.** Take aircraft-installed oxygen masks and firefighter masks to and from the life support section for required inspection and repair. Carry oxygen mask delivery hoses with the masks.

**A6.7.4.** Notify maintenance control when the aircraft installed or assigned life rafts require removal from the aircraft for periodic inspection and repacking.

**A6.7.5.** Notify maintenance control when the emergency evacuation slides require removal from the aircraft for periodic inspection and repacking.

**A6.7.6.** Make sure aircraft-installed oxygen walk around cylinders are available and serviceable.

**A6.7.7.** Make sure water jugs and ovens are available and serviceable on those aircraft requiring them.

**A6.7.8.** Record inspection dates of aircraft-installed life support equipment on AFTO Form 781K, **Aerospace Vehicle Inspection, Engine Data, Calendar Item Inspection and Delayed Discrepancy Document**. Include inspection dates for oxygen and firefighter masks, integral parachutes, survival kits, and life rafts.

**A6.8. Avionics Maintenance Section Responsibilities:**

**A6.8.1.** Inspect and repair all emergency survival radios and PLBs as required by the 3IR-series TOs.

**A6.8.2.** Inspect, repair, and perform TCTO modifications, and acquire spare parts for survival training radios and PLBs. The inspection frequency is the same as that established for standard operational equipment.

**A6.8.3.** Keep a bench stock of parts, including batteries, for repair and checkout of survival radios and beacons.

**A6.9. Aircraft Environmental System Section Responsibilities:**

**A6.9.1.** Provide inspection, refilling, overhaul, and replacement of life raft carbon dioxide and emergency oxygen cylinders, as required by the survival equipment, life support and SERE training sections.

**A6.9.2.** Keep a bench stock of items needed to repair carbon dioxide and emergency oxygen cylinders.

**A6.10. Plans and Scheduling and Documentation Section Responsibilities:**

**A6.10.1.** Notify the life support section of all new aircraft arrivals and transfers so it can establish or remove documentation records.

**A6.10.2.** Contact the life support section for help with incoming assigned aircraft acceptance inspection and repack of survival kits, parachutes, and other aircraft installed life support equipment.

**A6.11. Flight Medicine Responsibilities:**

**A6.11.1.** Visit the life support section quarterly to make sure it complies with TO 15X-1-1 standards.

**A6.11.2.** Be familiar with the operation of all AFMC-assigned pressure suits. Make sure flight personnel are physically qualified to take part in activities requiring full-pressure suits. The physiological training officer will have primary responsibility for all AFMC-assigned full-pressure suits.

**A6.11.3.** Give ambulance and medical technician support, upon request, for center- or range-conducted SERE training and parachute jumps.

**A6.12. Medical Supply Personnel Responsibilities:**

**A6.12.1.** Inspect first aid kits installed in both the aircraft and survival kit and replace unserviceable components according to applicable directives.

**A6.12.2.** Inspect and replace all unserviceable components of first aid kits used for SERE training.

**Attachment 7****TRAINING OUTLINE FOR NON-EJECTION EGRESS SYSTEMS**

**A7.1. Training Objective.** The main purpose of this training is to familiarize flying personnel with, and refresh them in, egress procedures for aircraft not equipped with ejection or extraction systems. This training outline covers aircraft egress up to and including parachute deployment and ground egress or ditching.

**A7.2. References:**

**A7.2.1.** TO 14D1-2-1.

**A7.2.2.** Parachute assembly TOs.

**A7.2.3.** Aircraft Flight Manual Dash Ones.

**A7.3. Training Aids:**

**A7.3.1.** Aircraft or appropriate mockups.

**A7.3.2.** Aircraft-installed life support equipment.

**A7.3.3.** Personal life support equipment and clothing.

**A7.4. Course Content:**

**A7.4.1.** Introduction:

A7.4.1.1. Motivation.

A7.4.1.2. Reasons for fatalities.

A7.4.1.3. Course overview.

**A7.4.2.** Systems description.

**A7.4.3.** Preflight:

A7.4.3.1. Personal equipment.

A7.4.3.2. Aircraft systems and equipment.

A7.4.3.3. Hazards (warnings and cautions) associated with life support equipment.

**A7.4.4.** Inflight egress:

A7.4.4.1. Basic egress principles:

A7.4.4.1.1. Need for a preplan.

A7.4.4.1.2. Body position.

A7.4.4.1.3. Exit.

A7.4.4.1.4. Free-fall.

A7.4.4.1.5. Crew coordination.

A7.4.4.1.6. Egress signals and commands.

**A7.4.4.2.** Bailout:

A7.4.4.2.1. Donning of required equipment.

A7.4.4.2.2. Capability of systems.

A7.4.4.2.3. Location of exits.

A7.4.4.2.4. Specific exit procedures:

A7.4.4.2.5. Low altitude.

A7.4.4.2.6. High altitude.

A7.4.4.2.7. Failure modes with recommended procedures.

A7.4.4.2.8. Post bailout:

A7.4.4.2.9. Normal parachute operation.

A7.4.4.2.10. Failure modes.

A7.4.4.2.11. Emergency parachute operation.

**A7.4.5. Ground egress:**

A7.4.5.1. Basic egress principles:

A7.4.5.1.1. Need for preplan.

A7.4.5.1.2. General methods (normal and emergency).

A7.4.5.1.3. Crew coordination.

A7.4.5.1.4. Egress direction.

A7.4.5.2. Specific egress procedures:

A7.4.5.2.1. Egress routes.

A7.4.5.2.2. Location of exits, slides, escape ropes, etc.

A7.4.5.2.3. Activation of hatches, exits, and slides.

A7.4.5.2.4. Failure modes with recommended procedures.

**A7.4.6. Ditching:**

A7.4.6.1. Egress routes.

A7.4.6.2. Location of exits and flotation devices.

A7.4.6.3. Donning of equipment.

A7.4.6.4. Activation of hatches, exits, and flotation devices.

**A7.4.7. Emergency oxygen use.**

**A7.4.8. Firefighting onboard fires:**

A7.4.8.1. General principles.

A7.4.8.2. Use of onboard firefighting equipment.

A7.4.8.3. Specific hazards.

**A7.4.9.** Review of all BOLDFACE and other critical egress-related procedures.

**A7.5. Hands-On Practice of Both Airborne and Ground Egress Procedures.**

**Attachment 8****TRAINING OUTLINE FOR EJECTION AND EXTRACTION SYSTEMS**

**A8.1. Training Objective.** The main purpose of this training is to familiarize flying personnel with, and refresh them in, the normal and emergency operations and procedures associated with an aircraft egress system. This training outline covers normal and emergency operating procedures up to and including parachute deployment.

**A8.2. References:**

**A8.2.1.** Applicable aircraft Flight Manual Dash One.

**A8.2.2.** Applicable aircraft egress systems TOs.

**A8.2.3.** TO 14D1-2-1.

**A8.3. Training Aids:**

**A8.3.1.** Ejection or extraction seat.

**A8.3.2.** Life support equipment used with the system.

**A8.3.3.** Aircrew life support equipment and clothing used during routine flying missions.

**A8.4. Course Content:**

**A8.4.1.** Introduction:

A8.4.1.1. Motivation.

A8.4.1.2. Reasons for fatalities.

A8.4.1.3. Course overview.

**A8.4.2.** Systems description.

**A8.4.3.** Preflight:

**A8.4.3.1** Personal equipment.

A8.4.3.2. Aircraft egress systems.

A8.4.3.3. Ejection seat entry.

A8.4.3.4. Ejection seat exit.

**A8.4.4.** Inflight egress:

A8.4.4.1. Basic egress principles:

A8.4.4.1.1. Need for a preplan.

A8.4.4.1.2. Ejection reaction.

A8.4.4.1.3. Ejection body position.

A8.4.4.1.4. Crew coordination in multiplace aircraft.

A8.4.4.1.5. Egress signals and commands.

A8.4.4.2. Ejection system operation:

- A8.4.4.2.1. System capabilities.
- A8.4.4.2.2. Ejection procedures.
- A8.4.4.2.3. Immediate ejection.
- A8.4.4.2.4. Controlled ejection.
- A8.4.4.2.5. High or low altitude considerations.
- A8.4.4.2.6. Failure modes with recommended procedures.
- A8.4.4.2.7. Post ejection:
- A8.4.4.2.8. Normal system operation.
- A8.4.4.2.9. Failure modes.
- A8.4.4.2.10. Emergency system operation.

**A8.4.5. Ground egress:**

- A8.4.5.1. Basic egress principles:
  - A8.4.5.1.1. Need for preplan.
  - A8.4.5.1.2. General methods (normal and emergency).
  - A8.4.5.1.3. Crew coordination.
  - A8.4.5.1.4. Egress direction.
- A8.4.5.2. Emergency egress system operation:
  - A8.4.5.2.1. Emergency egress procedures.
  - A8.4.5.2.2. Failure modes and recommended procedures.

**A8.4.6. Ditching procedures.**

**A8.4.7. Emergency oxygen activation**

**A8.4.8. Review of all BOLDFACE and other critical egress-related procedures.**

- A8.4.8.1. Emphasis given to flight control interference on multiplace aircraft.

**A8.5. Hands-On Practice of Airborne and Ground Egress Procedures.**

**Attachment 9****TRAINING OUTLINE FOR PARACHUTE HANGING HARNESS**

**A9.1. Training Objective.** The main purpose of this training is to familiarize flying personnel with, and refresh them in, parachute procedures. This lesson outline covers parachuting procedures from just before parachute canopy deployment to landing.

**A9.2. References:**

**A9.2.1.** TO 14DI-2-1.

**A9.2.2.** Applicable parachute assembly egress TOs.

**A9.3. Training Aids:**

**A9.3.1.** Parachute assembly, torso harness, or both.

**A9.3.2.** Hanging harness trainer.

**A9.3.3.** Survival kit.

**A9.3.4.** Aircrew life support equipment and clothing used during routine flying missions.

**A9.4. Course Content:**

**A9.4.1.** Brief scenario of system operation.

**A9.4.2.** Free-fall procedures (body position, etc.).

**A9.4.3.** Parachute deployment:

A9.4.3.1. Automatic.

A9.4.3.2. Manual.

**A9.4.4.** \*Possible malfunction and corrective action.

**A9.4.5.** \*Parachute descent procedures according to TO 14DI-2-1:

A9.4.5.1. Overwater procedures.

A9.4.5.2. Overland procedures.

**A9.4.6.** \*Parachute canopy control.

**A9.4.7.** Landing procedures for:

A9.4.7.1. \*General and open terrain.

A9.4.7.2. \*Water landing.

A9.4.7.3. \*Tree landing.

A9.4.7.4. \*Power line landing.

A9.4.7.5. \*High winds.

**A9.4.8.** Review of critical normal procedures.

**A9.5. Review Critical Items.**

\* - Complete while suspended in a hanging harness trainer

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